

UNIVERSITY ENVIRONMENT POLICY

2022

Department of Environmental Studies



BERHAMPUR UNIVERSITY

Bhanja Bihar – 760007

Odisha, India

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A document that emphasizes sustainable utilization, management, conservation, and prevention of degradation of natural resources based on a sound ecological approach and principles of inclusivity.

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1. About the Policy Document

1.1. Background

The conceptualization of University Environment Policy (UEP) is based on the creation of the Department of Environment Studies (DES) at Berhampur University (BU). The history of the DES goes back to 2018 when its earlier avatar – the Department of Natural Resources Management and Geoinformatics (NRMG) was established in the erstwhile Khallikote University, Berhampur. Initially, the department had an interdisciplinary focus offering Master's (M.A./M.Sc.) and Ph.D. degrees at Khallikote University. After the amalgamation of Khallikote University with Berhampur University (BU), a major academic restructuring exercise was carried out, and in Berhampur University while maintaining the interdisciplinary nature, the present Department of Environment Studies was created in the year 2021. Presently, this is the only University in the state which offers Post Graduate and Doctorate degrees in the subject of Environment Studies. The genesis for such a department was to produce quality manpower in the field of Environment and Sustainability both through teaching and R&D activities, to meet the aspirations of the state as well as the country. In addition to imparting quality education, the Department initiated proactive steps to draft a policy document that will be the guiding force for the management and conservation of the natural resource base of BU Campus.

1.2. About the University

Berhampur University, a state-run Public University, was established on 2nd January 1967 by the Odisha Act 21 of 1966 as an affiliating University. With a geographical area of around 250 acres, the Berhampur University campus (19°18'01" – 19°17'24" N and 84°52'48" – 84°52'12" E) at Rangeilunda, Berhampur is bestowed with mosaic habitats, viz., inland water bodies, freshwater marshes, agricultural lands, plantation area, grassland, open field, moderate forest patches, and human habitations and road networks. The university campus is represented by abundant natural resources, especially its inland water bodies, woodlands, and *Casuarina* patches. There are around eight water bodies present in and around the university campus. An airstrip namely Rangeilunda Airstrip is an open field with small herbs, shrubs and fewer trees. The University campus is represented by its rich flora and fauna. More than 100 species of birds seen in the Campus add to the rich faunal resources of the campus. The woodlands and shrub patches of the University have been known to be an abode for

around 50 Spotted deer (*Axes axes*), popularly known as deer park (with an area of 2.61 acres). However, last year the deer park was closed down by the state forest department, and the deers (antelopes) were translocated to Lakhari Valley Wildlife Sanctuary (LVWS) in the Gajapati district in Odisha. Further, flying fox roosting colonies in the woodland patches of the campus have been the most sought-after sites for animal lovers in the campus.

The University Environment Policy (UEP) 2022 is a document that provides a base to develop strategies and action plans for sustainable management of natural resource base of the University Campus, seeks to extend the coverage, and fill in existing gaps, in light of present knowledge and accumulated experience. It does not displace, but builds on the earlier plans and programmes, if any, and essentially an inclusive document to be referred by all potential stakeholders.

1.3. Preamble

A vibrant University Campus, such as that of BU provides numerous challenges in the management of natural resources and making the campus self-reliant in many aspects, w.r.t. utilization of natural resources. Presently, more than half a dozen of national policies is available providing operational guidelines for the management of natural resources of the country as a whole, *viz.*, National Forest Policy, 1988; National Conservation Strategy and Policy Statement on Environment and Development, 1992; Policy Statement on Abatement of Pollution, 1992; National Agriculture Policy, 2000; National Water Policy, 2002; National Environment Policy, 2006. Being guided by such policy documents and in sync with Sustainable Development Goals, and various national missions/targets, the Department of Environment Studies strives to prepare the University Environment Policy (UEP) – 2022, which can be a guiding document to develop strategies for sustainable management of natural resources, facilitate a reduction on the dependence on non-renewable energy resources, and waste management with a focus on resource recovery. Thus, the University Environment Policy (UEP) 2022 is a document that provides a base to develop strategies and action plans for sustainable management of the natural resource base of the University Campus, seeks to extend the coverage, and fill in existing gaps, in light of present knowledge and accumulated experience. It does not displace, but builds on the earlier plans and programs, if any, and is essentially an inclusive document to be referred by all potential stakeholders.

The UEP is a response to our national commitment to a clean environment, mandated in the Constitution in Articles 48 A and 51 A (g), strengthened by judicial interpretation of Article 21.

In the Directive Principles of State Policy, Article 48A says "the state shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country"; and Article 51-A states that "it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures". Thus, it is recognized that maintaining a healthy environment is not the state's responsibility alone, but also that of every citizen. The University Campuses can be microcosms for such participatory approaches to natural resources management and conservation. Thus, a spirit of partnership should be realized throughout the spectrum of environmental management in the university campus. While the University administration must galvanize its efforts, it should also be recognized by each individual/stakeholder, of its responsibility towards maintaining and enhancing the quality of the environment in the University.

1.4. Principles

The UEP – 2022 is governed by certain principles that emphasize the

- Role of stakeholders in the sustainable development processes of BU campus
- The non-negotiability and incomparable value of environmental resources in the campus
- Potential of renewable and perpetual resources to augment campus functioning
- Right to sustainable development for all stakeholders
- Equity in the use of environmental resources and
- The need for a decentralized and multisectoral approach in dealing with environmental issues.

1.5. Objectives

The UEP – 2022 provides guiding principles to accomplish the following objectives:

- Conservation of critical environmental resources in the campus and beyond
- Intra-generational equity
- Integration of environmental concerns in economic and social development (reduction of pressure on BU's financial resources)
- Efficiency in environmental resource use
- Environmental governance

- Enhancement of resources for environmental conservation
- Promoting Environmental Education

2. Key Environmental Issues, Challenges and Potentials

With 250 acres of area, the BU campus has its share of issues, challenges and opportunities w.r.t. natural resources and the potential to tap them. The major prevailing issues and challenges in the BU campus are:

- Conservation of water resources
- Tapping of various renewable and perpetual resources
- Waste management (solid and liquid waste)
- Lack of interest among stakeholders in realizing the natural resource potential of the campus
- Ever increasing financial burden to meet the energy demands of this vibrant university

Thus, to address these issues and challenges, the existing potential to tap the natural resources must be realized which will facilitate in reduction of the financial burden and environmental costs of functioning of this University. Some of the relevant points are enumerated as under:

- Vast area (open/forested) available to facilitate groundwater recharge
- Availability of many big buildings (administrative and academic blocks) for
 - Structured rainwater harvesting
 - Installation of rooftop solar panels
- Availability of intellectual pool and technical know-how for management of
 - Solid waste (through eco-friendly techniques, e.g. vermicomposting)
 - Liquid waste management (availability of low-lying area for a constructed treatment wetland system designed for biofiltration and treatment of liquid waste)

3. Strategy and Action Plan

Having realized the issues and challenges, and the available potential for management of environmental resources base and potential for sustainable development, the following strategies are developed:

- i. **Rainwater Harvesting System:** With an annual rainfall of around 1400 mm, the buildings on the BU campus provide sufficient space to install rainwater harvesting systems. The structured and organized rainwater harvesting systems may be installed in a phased manner covering all the buildings of the university campus. This may be achieved in the next 05 years with the following (tentative) plan:
 - Phase-I: Administrative Building & 1-2 Academic Blocks
 - Phase-II: All the departments/academic blocks
 - Phase-III: All the hostels & residential blocks
- ii. **Roof Top Solar Panel:** Presently, the BU campus has a huge administration building, more than 20 academic buildings, nearly 17 hostels, and several staff quarters (residential buildings). Thus, the roof area available from these buildings would be adequate to install roof-top solar panels, which may help in our strive to make the BU Campus self-reliant w.r.t. energy demands and consumption. Thus, roof-top solar panels can be installed appropriately. The available schemes and subsidies of different line departments of the Government of Odisha and the Government of India may be availed in this endeavor. The proposed plan can be executed in a phased manner in the next 05 years:
 - Phase-I: Administrative Building & 1-2 Academic Blocks
 - Phase-II: 50% of the departments/academic blocks
 - Phase-III: Rest 50% of the departments/academic blocks
 - Phase-IV: All the hostels
 - Phase-V: All the residential blocks
- iii. **Waste Management:** A functional and vibrant university campus will end up generating waste (solid and liquid) from its daily and routine activities. Thus, necessary plans are to be developed for the management of both solid and liquid waste. Some of the proposed strategies are as under:
 - **Solid Waste Management:** This will include the followings:
 - segregation of waste at source into biodegradable and non-biodegradable categories (in separate bins at respective offices and other locations)
 - Coordination with the Municipal authorities for the collection of non-biodegradable waste for further treatment and processing

- Organized collection of biodegradable waste by BU assigned team for relevant treatment methods. Owing to the type of biodegradable waste in the camps (e.g. food waste, flowers), Vermi-technology can be a potential option.
- **Vermi-technology:** Vermi-composting units may be established for the treatment of biodegradable waste, and conversion to organic manure on the campus. For the ease of scaling-up and replication, and to address the operational challenges, it is planned to be developed in a phased manner:
 - Phase-I: A captive vermicomposting unit in girls' hostel premises
 - Phase-II: Replication in Boys' hostel premises
 - Phase-III: Further scaling up to include all the residential blocks, and office complex.

The Department of Environment Studies can provide the technical-knowhow and all the necessary intellectual support in the functioning and management of such units, with necessary financial and human resource support from BU authorities.

- **Liquid Waste Management:** Owing to the large volume of wastewater that is generated from various buildings, an appropriate level of treatment must be offered to the wastewater before its release into the municipal sewerage system. Thus, the following action plan is developed:
 - **Segregation of waste collection:** Being a University campus, most of the wastewater that is generated from various buildings will be a largely organic waste. However, owing to functional laboratories in different science department buildings, chemical waste is also generated. Thus, it is essential that for those departments, a separate wastewater collection system has to be developed without mixing them with routine wastewater (generated from canteen, office, washrooms, etc.).

- **Disposal of unused chemicals and reagents:** BU can register with accredited agencies dealing with hazardous waste collection and treatment. The said agency can periodically come to the BU campus and collect the hazardous waste (unused chemicals and chemical waste) from the Science departments, for their further treatment and safe disposal. This will help in reducing surface and groundwater contamination in the area.
- **Constructed Wetland System:** Since the wastewater generated from the campus will have high organic loading and nutrients, the necessary system can be developed for offering a certain degree of treatment (preliminary, primary and secondary). Although engineering treatment methods prove useful, a well-developed ecological engineering method can be sustainable, environment friendly and cost-effective. Thus, a constructed treatment wetland system can be developed on the campus, which can offer biological treatment and biofiltration systems to the wastewater released from the campus. However, appropriate preliminary treatment is to be offered to the wastewater (bar screens) to remove large solids, and suspended and floatable substances, before their release into the treatment wetland system.


The Department of Environment Studies can provide the technical-knowhow and all the necessary intellectual support in the functioning and management of such units, with necessary financial and human resource support from BU authorities. However, for some of the specific issues, in the initial stage, external collaboration may be required.

- iv. **Environmental Education:** The success of all the aforementioned plans depends solely on the perception, attitude, practice, and acceptability of all the stakeholders in the BU Campus. Thus, periodic extension, outreach and education programs need to be organized, to ensure all-round involvement of all the stakeholders in the

proposed endeavors. Efforts have to be made to induce the element of acceptability in the stakeholders.

The above-mentioned strategic plans, if implemented by letter and spirit, can facilitate the BU campus to become and green campus and make it self-reliant on energy utilization.


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